



Weather and Climate



Gates of the Arctic Summer 2013 Weather Summary

Was Summer 2013 Normal?

Bettles was 0.7° F warmer than normal and very dry this summer. 3.77 inches of rain fell during the summer compared to a normal value of 6.4 inches. In particular, the second half of June and mid-July through mid-August were warm and dry. Both maximum and minimum daily temperature records were set as listed below:

Highest Maximum Temperature
8/7, 83°

Highest Minimum Temperature
6/25, 60°
6/30, 60°

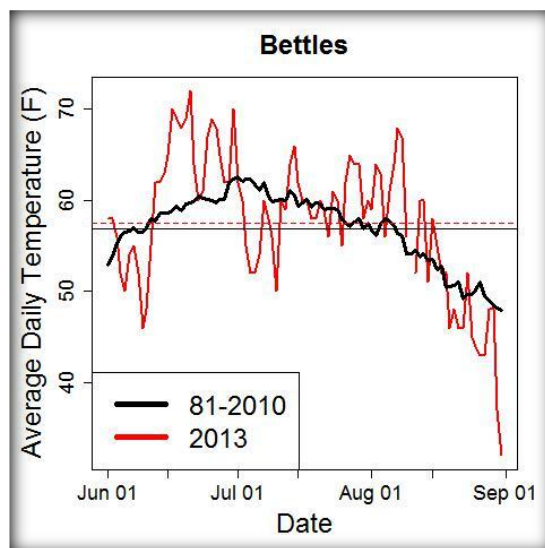
Lowest Minimum Temperature
7/4, 39°
7/6, 40°
8/26, 28°
8/31*, 15°
*Monthly low record.

In Bettles, June was warm and dry, with an average monthly temperature of 61.1° F, which is 2.6°F warmer than normal. Record high minimum temperatures were recorded on 6/25 and 6/30 (both 60° F). 0.77 inches of rain fell during June, only 55% of normal.

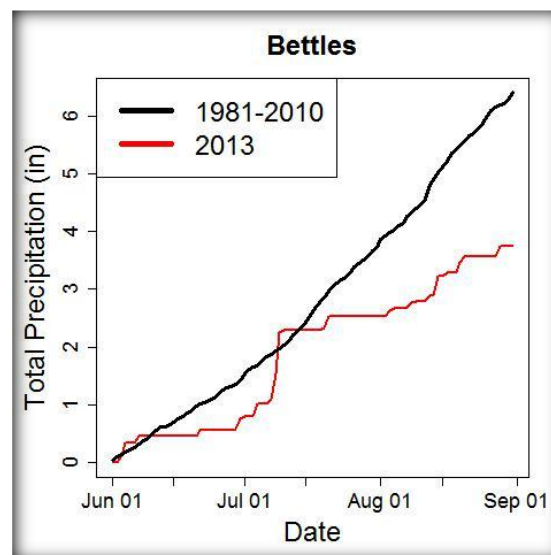
The July average temperature was 59.0° F, just below the normal value of 59.7° F. Cold nights in the first week of July produced record breaking minimum temperatures on July 4 (39° F) and July 6 (40° F). Wet conditions from July 4-9 dropped 1.47 inches of rain, but the rest of the month was dry. Overall, precipitation for the month was 75% of normal.

The average temperature for August was just 0.1° F higher than normal. Warm temperatures the first week of the month climaxed with a high of 83° F, breaking the old record set in 1966 by one degree. The low temperature of 15° F recorded on 8/31 broke the old record of 22° F from 1974. The temperature of 15° F is the lowest temperature recorded for the month of August since records began in 1944. Dry conditions persisted through August, with only 1.23 inches compared to a normal 2.64 inches. For the season, total precipitation was only 59% of normal.

Bettles – Average Air Temperatures



Bettles – Cumulative Precipitation



Gates of the Arctic Spring 2013 Weather Summary

Bettles Weather Records:

Climate Normal Period 1981 – 2010

Climate Record Period 1944 – 2013

Temperature

Summer 2013	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
June	61.1	58.5	+2.6	87 / June 19	47 / June 9
July	59.0	59.7	-0.7	85 / July 14	39 / July 25
August	52.6	52.5	+0.1	83 / Aug 7	15* / Aug 31

Summer Season Temperature Departure from Normal: +0.7°F

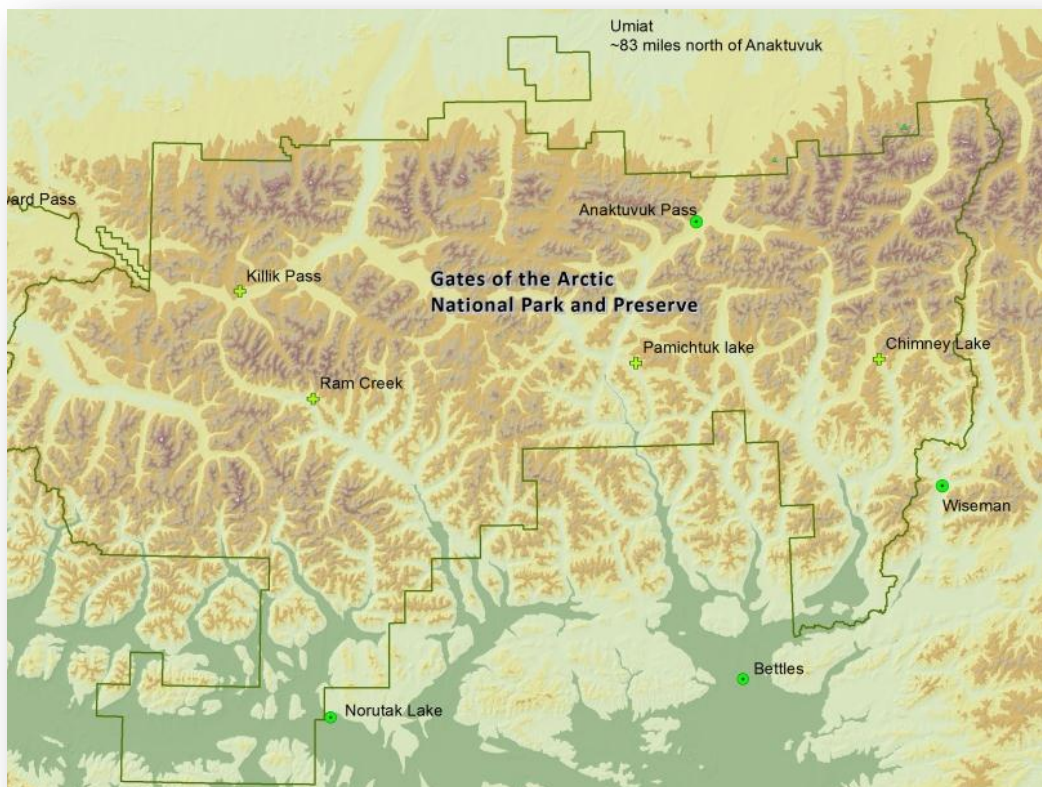
*Record Low for August

Precipitation

Summer 2013	Total Monthly Precip. in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 –hr. total in. / Date	# Days with ≥ 0.01 in. water
June	0.77	1.4	-0.63	0.35 / June 3-4	6
July	1.77	2.36	-0.59	0.81 / Jul 8-9	8
August	1.23	2.64	-1.41	0.35 / Aug 14	14

Summer Season Departure from Normal: -2.6 inches

As part of the climate monitoring vital sign, we now have additional NPS climate stations in Gates of the Arctic National Park and Preserve that complement the existing National Weather Service station at Bettles. The new NPS stations will provide critical data on high elevation sites in the Arctic and will help characterize the climate gradients and patterns affecting resources in the park. Data from Wiseman and Umiat are also summarized.



Gates of the Arctic Spring 2013 Weather Summary

Gates of the Arctic weather summaries Summer 2013:

Site	Elev. Ft.	Summer 2013 Average Temp (°F)			Precipitation (inches)*			Peak Wind (mph)
		June	July	Aug	June	July	Aug	
Umiat	267	54.1	56.2	48.1	1.00	1.57	0.97	38
Wiseman	1290	58.8	54.3	50.7	0.66	2.47	1.66	**
Chimney Lake	3100	51.6	50.2	44.4	1.31	1.62	1.71	41
Ram Creek	4110	50.3	48.6	42.8	2.09	0.72	m	34
Killik Pass	4355	47.4	46.3	40.2	1.72	1.02	0.95	36
Pamichtuk	3100	53.1	51.9	45.4	1.03	0.92	0.97	39

* Preliminary data subject to revision – precipitation gages are not shielded and therefore rainfall totals may be lower than actual amounts. ** Wind not measured at Wiseman.

Notes: Anaktuvuk Pass missing data for summer season.

Interesting notes from RAWS stations:

- Killik Pass had the lowest average summer temperature of all stations analyzed in the Arctic Network.
- Temperatures stayed above freezing at all RAWS stations from June 10, until the first freeze on August 20.
- The average summer temperature was 2.6°F colder at Killik Pass on the north side of the Brooks Range than at Ram Creek on the south side of the Range.
- Chimney Lake, Ram Creek, Killik Pass, and Pamichtuk are all windy locations, with peak wind gusts 35-45 mph, calm conditions less than 5% of the time, and average wind speeds near 10 mph this summer



A camera was installed at Pamichtuk in May 2013 to monitor changes in phenology and snow cover. Photos will be stored on site and retrieved each year during field visits.

Connecting Further

Previous weather summaries and other climate monitoring documents on the [Arctic Network web portal](#)

Access near real-time data from [Western Regional Climate Center](#) and [MesoWest](#)

Check out the Jul-Aug-Sep weather outlook from the [NOAA Climate Prediction Center](#)

Statewide summary of weather highlights in the latest [Alaska Climate Dispatch](#) from the Alaska Center for Climate Assessment and Policy

[Map](#) of projected temperature and precipitation changes for Gates of the Arctic National Park and Preserve.

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Please Note: The summarized data are preliminary and have not undergone final quality control. Therefore, these data are subject to revision.